

# RECLAMATION

*Managing Water in the West*

## Consideration of Future and Historic Benefits



U.S. Department of the Interior  
Bureau of Reclamation

# Project Cost Allocation Purpose

- To comply with Federal law and policy requirements regarding project financing
- To determine financial feasibility of a project
- To equitably and impartially distribute the advantages & cost savings of a multi-purpose project among the purposes served, without regard to reimbursement or cost-sharing policy

# Project Cost Allocations (PEC 02-01)

- 3. Costs to be Allocated
  - Costs are adjusted for time of occurrence by the application of appropriate compound interest and annuity factors to derive equivalent present worth monetary values **at the beginning of the first calendar year of project service**

# Project Cost Allocations (PEC 02-01)

- 4. Benefits Used in Cost Allocation
  - All benefits, SPA costs, and costs for allocation purposes will be placed on a comparable basis in relation to time of occurrence using the same interest rate and period of analysis. Benefits will be capitalized to their present worth (lump sum) amounts **at the first calendar year of project service**

# Project Cost Allocations (PEC 02-01)

- 6. Period of Analysis

- The period for estimating benefits and costs used in the cost allocation process will be the same as that used in project formulation and evaluation, which is the lesser of the economic life of the project, or 100 years **beyond the initial date of service**. (P&G 1.4.12)

# Cost Allocation

- **Methodology**
  - **Separable Costs Remaining Benefits (SCRB)**
  - **Prescribed Allocation Method for Federal Water Resource Studies**
    - **7-Step Process**



# SCRB 7-Step Process

- Estimate the monetary Benefits provided by each project purpose
- Estimate Single Purpose Alternative Costs and determine Justifiable Expenditure (lesser of the Benefits or Single Purpose Alternative Costs)
- Subtract *Separable Costs* to determine *Remaining Justifiable Expenditure*
- Calculate the proportionate share of *Remaining Joint Expenditure* for each purpose
- Determine the *Remaining Joint Costs* by subtracting all the *Separable Costs* from the *Total Project Costs*

# SCRB 7-Step Process (cont.)

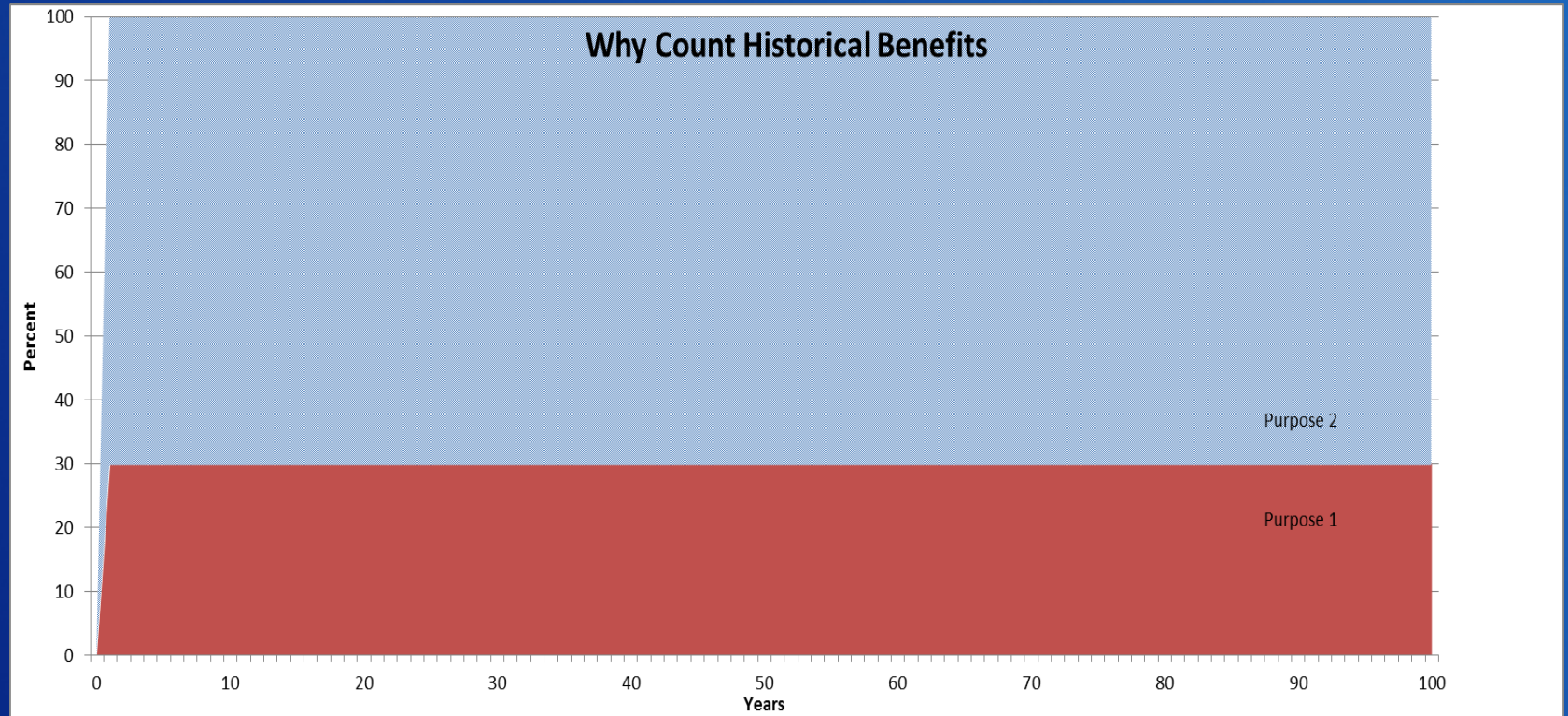
- Allocate the *Remaining Joint Costs* among the project purposes according to the percentages derived in step 4
- Calculate the total costs allocated to each purpose



# Benefit Analysis

- **Benefits Evaluation**
  - 100-year period(s) for each project purpose
  - Historical benefits brought forward to base year
  - Future benefits present-valued to base year
  - Accomplishments (deliveries) times base year unit value
  - **Historic Benefits**
    - Actual accomplishments (deliveries)
  - **Future Benefits**
    - Reasonably foreseeable conditions (deliveries)

# Original Benefit Stream



**Project Cost: \$1,000,000**

Proportion of benefits from:

Past and Future Years 1 through 100

Purpose 1

30.00%

Purpose 2

70.00%

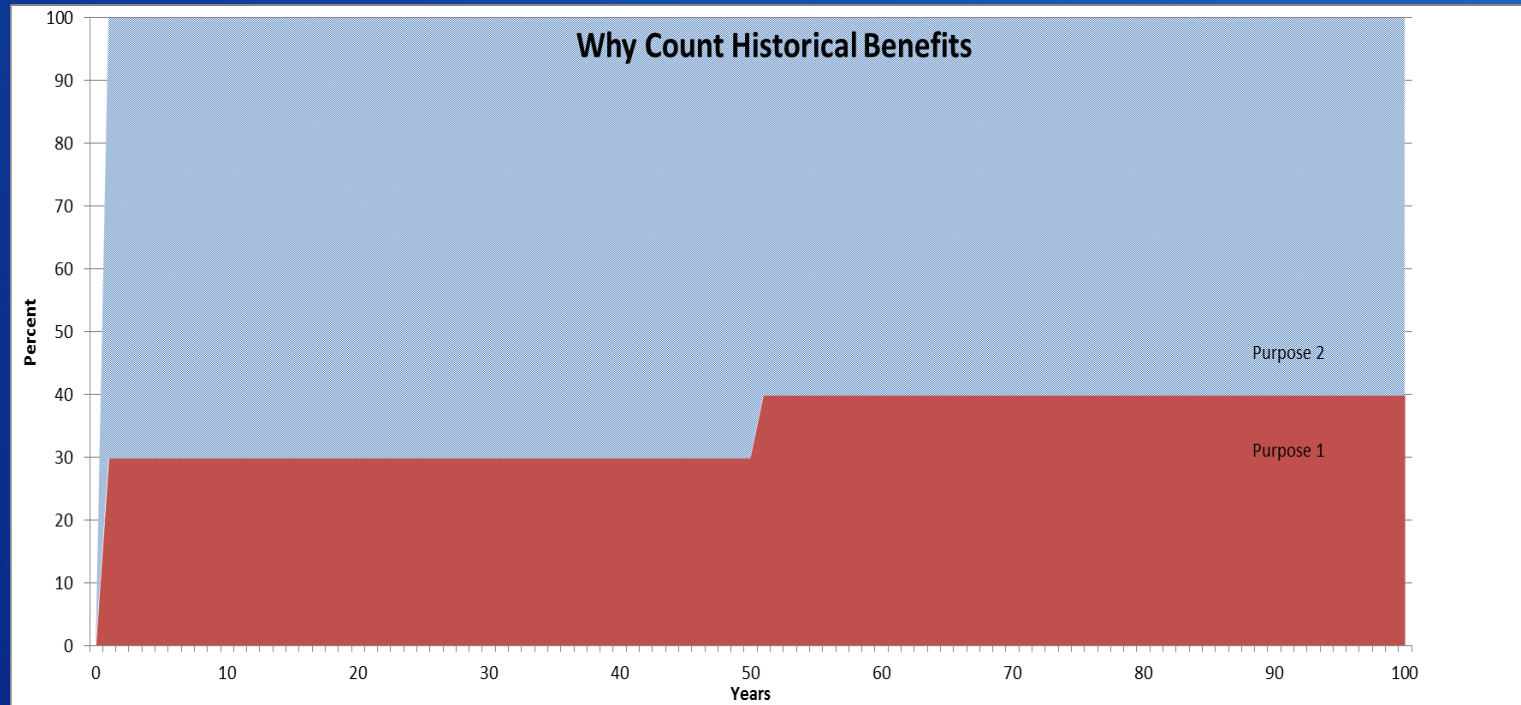
Purpose 1

\$300,000

Purpose 2

\$700,000

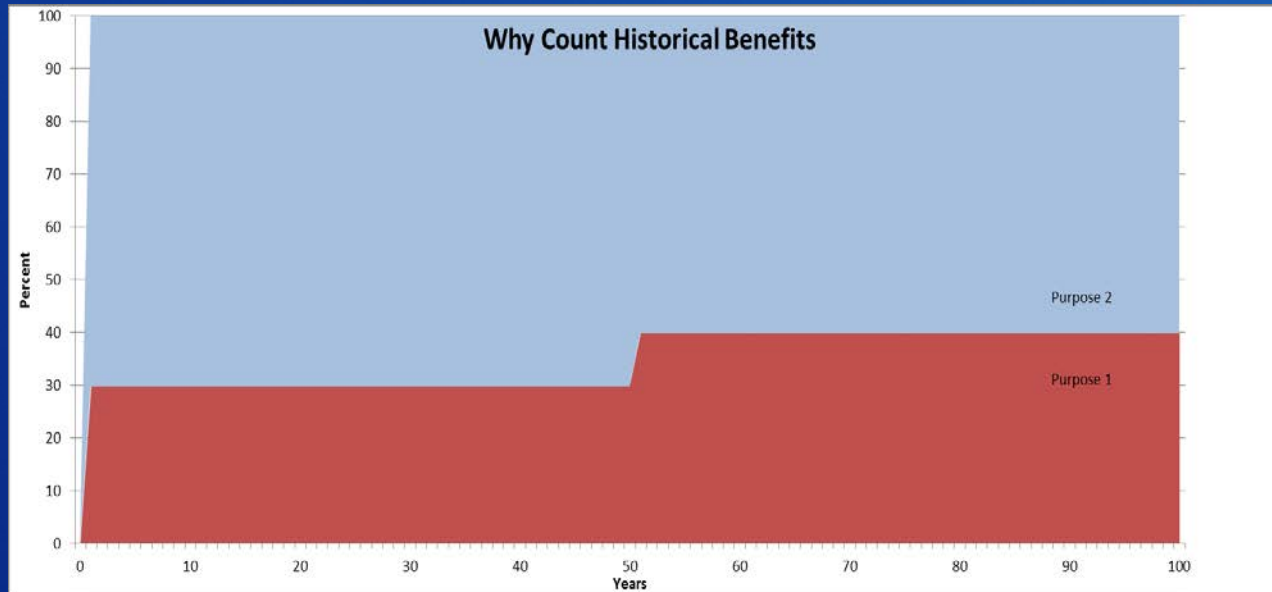
# Changed Benefit Stream (Year 51)



**Project Cost: \$1,000,000**

Proportion of benefits from:	Purpose 1	Purpose 2	Purpose 1	Purpose 2
Past Only Years 1 through 50	30.00%	70.00%	\$150,000	\$300,000
Future Only Years 51 through 100	40.00%	60.00%	\$200,000	\$300,000
Past and Future Years 1 through 100	35.00%	65.00%	\$350,000	\$650,000

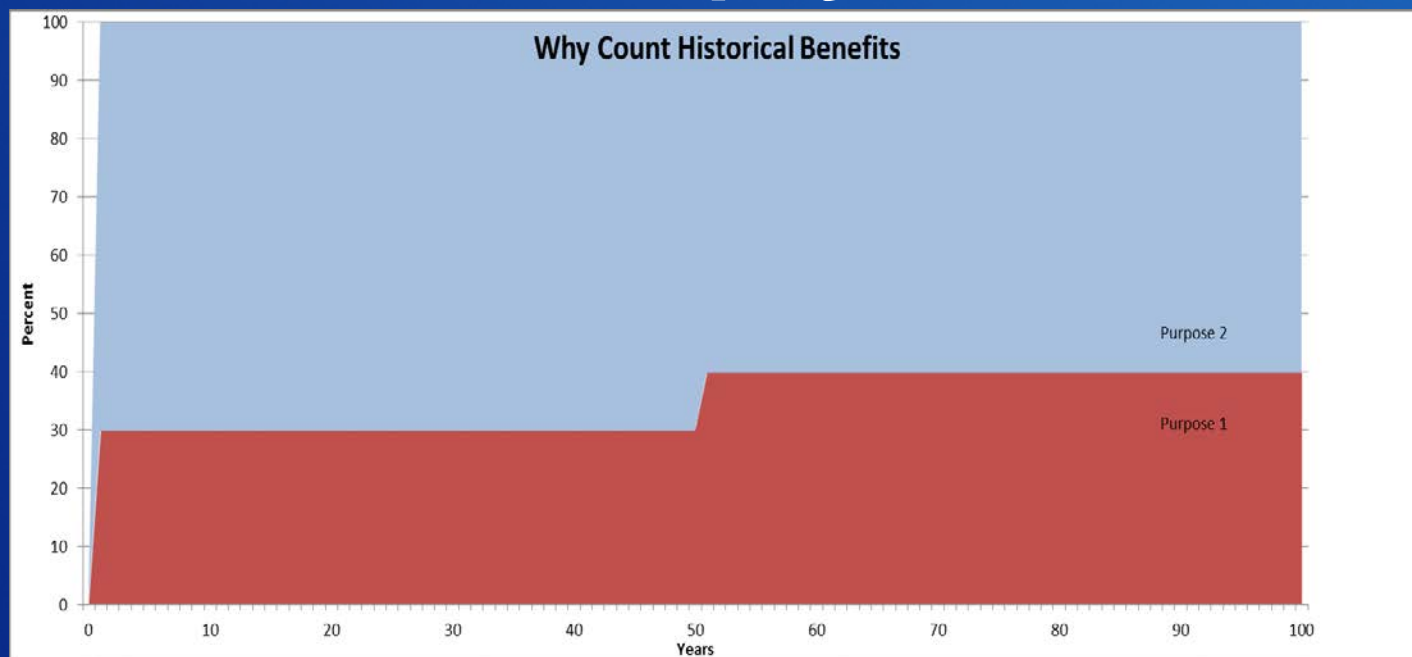
# Constant Repayment



**Project Cost: \$1,000,000**  
**Repaid by Year 50: 500,000**  
**Remaining Obligation: 500,000**

Proportion of benefits from:	Purpose 1	Purpose 2	Purpose 1	Purpose 2
Past Only Years 1 through 50	30.00%	70.00%	\$150,000	\$350,000
Future Only Years 51 through 100	40.00%	60.00%	\$200,000	\$300,000
Past and Future Years 1 through 100	35.00%	65.00%	\$350,000	\$650,000

# Accelerated Repayment

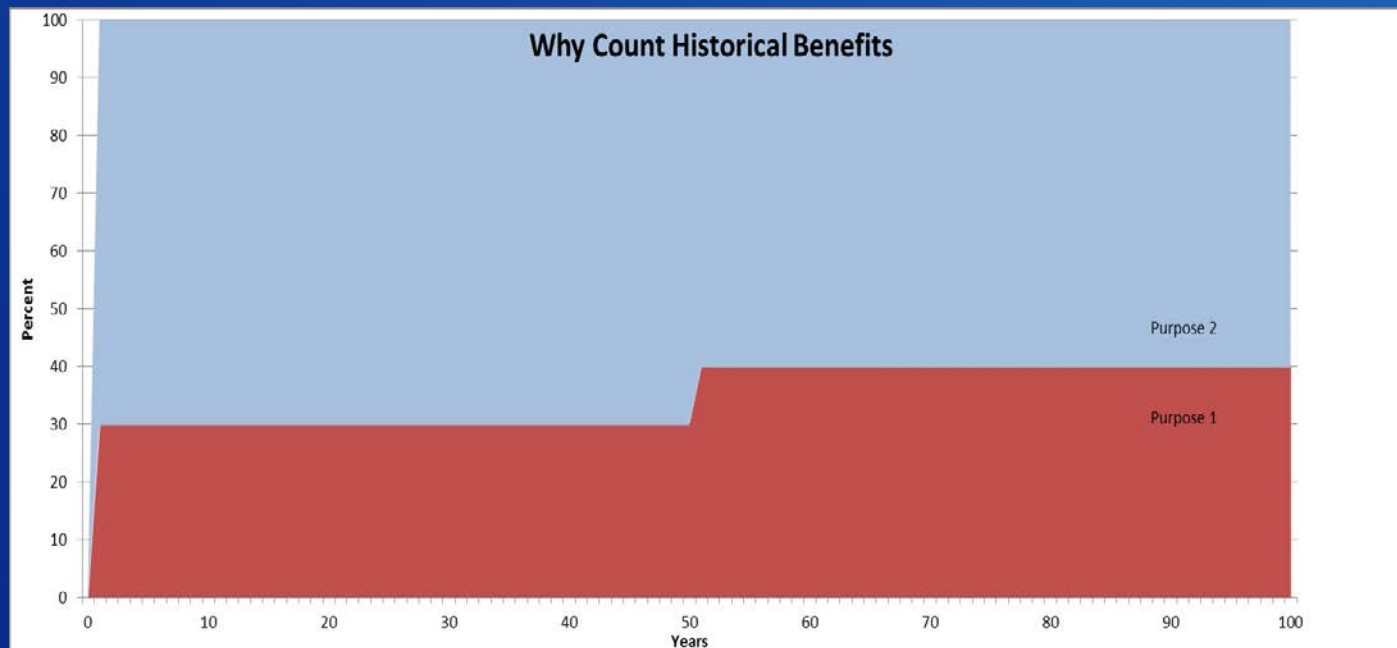


**Project Cost: \$1,000,000**  
**Repaid by Year 50: 750,000**  
**Remaining Obligation: 250,000**

Proportion of benefits from:	Purpose 1	Purpose 2	Purpose 1	Purpose 2
Past Only Years 1 through 50	30.00%	70.00%	\$225,000	\$525,000
Future Only Years 51 through 100	40.00%	60.00%	\$100,000	\$150,000
Past and Future Years 1 through 100	35.00%	65.00%	\$325,000	\$675,000



# Delayed Repayment



Project Cost: \$1,000,000  
 Repaid by Year 50: 250,000  
 Remaining Obligation: 750,000

Proportion of benefits from:	Purpose 1	Purpose 2	Purpose 1	Purpose 2
Past Only Years 1 through 50	30.00%	70.00%	\$ 75,000	\$175,000
Future Only Years 51 through 100	40.00%	60.00%	\$300,000	\$450,000
Past and Future Years 1 through 100	35.00%	65.00%	\$375,000	\$625,000



# Questions?